TECHNOLOGY AND LITERACY

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Reading in the Content Area

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Technology and Literacy

On April 3rd, Apple Software released its new computer, the iPad, and many computer users have been excited to get their hands on this new piece of technology (Griggs and Sutter, 2010). The iPad is a new laptop that is lightweight and thin. Because there is no keyboard, all functions are executed through the touch screen computer. Many are excited for the features this device performs as it will change how a computer is used at home, on the go, or in the work force. With all the iPad’s features in mind, it is amazing to think how far technology has progressed. Even more so, it is impressive to think of how many things today have been revolutionized by technology. Technology helps to complete projects easier, run tasks more efficiently, and increase productivity. Technology has been integrated into many aspects of today’s society, and the education world is no exception.

Using technology in the classroom can be beneficial, especially for students who struggle with reading. In fact, several studies show that using a variety of technological tools in the classroom can improve a student’s fluency and comprehension (Anderson and Balajthy, 2009; Ediger, 2002; Schweder and Wissick, 2008; Vacca and Vacca, 2008). Also, there is a greater chance that a student will retain information if technology is used in the reading curriculum (Ediger, 2002). Teachers should therefore be conscious of current technologies and be willing to use them when focusing on students with reading disabilities.

There is a vast array of technologies available to help struggling readers improve their skills. Of the ones researched for this paper, the technology can be grouped into one of three categories. The first group consists of hardware technology. These technological aids are material devices designed and developed to help struggling readers improve their literacy. The second category is software technology. These are programs designed to be used on a home or school computer. The final category consists of internet based technologies. These technological advances rely on the internet to increase literacy and to teach children a variety of skills.

The first technology group mentioned is hardware technology. These technologies are actual instruments developed for educational purposes. They are material tools that can be used by an educator or struggling reader. They function on their own and do not usually need the aid of a computer to work. There are several examples of this technology that are used in the classroom today.

One of the better known examples of hardware technology is the SMART Board. The SMART Board is an interactive whiteboard that has become popular in education over the previous years. Teachers are able to use this board as a standard whiteboard, or they can use it as an interactive device to teach a lesson. It is a way for teachers to present information on a large, interactive screen while using sounds, videos, and the internet to present materials. The SMART Board is a wonderful device to use in the classroom and an excellent tool to help struggling readers improve their skills. In a study conducted by Mechling, Gast, and Krupa (2008), moderately disabled students were able to learn words more effectively and with greater accuracy when taught on SMART Board technology than when taught using traditional flash cards. Furthermore, Mechling, Gast, and Krupa (2007) found that students are able to match objects to printed word, and vice versa, more effectively when using SMART Board Technology. This technology is very successful because it makes the learning materials “come alive” for children in ways that a textbook cannot (Williams and McClintic as cited in Mechling, Gast, and Krupa, 2008, pg 44).

Another type of hardware technology is the electronic book (e-book). E-books are books that have electronic text displayed on a devise slightly smaller than a standard text book. Stories and articles are easily downloaded and stored on the machine. If a reader wants to read a particular story, he or she needs to simply select the story, and the story is brought forth on the electronic screen. One of the major benefits of e-books is that it eliminates students from having to carry many large textbooks. Students can carry around a single device and still access several class textbooks at their convenience. This allows students to access reading assignments at any time and not just when they feel like carrying the books with them. This eliminates forgetting a textbook in school or having to forfeit leaving a textbook behind because it is too bulky to carry. In addition, e-books are beneficial for students’ comprehension. Longer and more difficult passages are read more successfully when on an e-books than on their paper counterpart (Greenlee-Moore and Smith as cited in Vacca and Vacca, 2008, p 427). It is a great tool for students to use and is something that students respond positively to (Ediger, 2002; Mathews as cited in Vacca and Vacca, 2008, p 247).

The second type of technology available to help struggling readers is software technology. This group of technology consists of programs designed to help readers improve their literacy. They usually are developed with a focus to overcome a specific reading difficulty. The advantage of these programs is that they can be loaded onto a school or home computer. This makes it accessible in a variety of locations.

One example of this technology is the Automatic Speech Recognition (ASR) software. The ARS programs use a microphone to record the voice of a student reading a passage. The program analyses the speech in real time and gives instantaneous feedback. If an error is made, the program points it out immediately and offers a solution to the mistake (Husni and Jamaludin, 2009). This feedback is in real time and is important for students to receive. In fact, the sooner the correction is delivered, the more beneficial it is (Husni and Jamaludin, 2009). The main benefit of ARS technology over other programs is that a student does not need to manually call for help. This eliminates errors going unnoticed and having them become a major disadvantage to a student’s education (Husni and Jamaludin, 2009)

Another software technology designed to aid reading development is timed reading programs. These programs, such as “ACE Reader,” improve fluency while maintaining comprehension (StepWare, 2010). The basic function is for students to sit in front of a computer and read a passage. After the reading, a few questions are given to assess comprehension. The computer will calculates the student’s reading rate and comprehension and chart them over several passages. For extra practice, the software can force a reading rate to help increase a child’s literacy. Programs like “Ace Reader” are beneficial because use a variety of techniques to allow students with different learning styles and disabilities to increase fluency and comprehension (StepWare, 2010).

The third type of technology available for struggling readers is internet based technology. The internet is a powerful tool, and can be a vital key to help students improve their reading skills. There is a vast array of knowledge and media on the internet to help students learn. In addition, it is highly interactive and a tool that many already know how to use. This type of technology has a large number of applications; a few which will be discussed.

One of the more interactive applications of internet technology is the use of hyperlinks. Hyperlinks are internet links embedded into a reading passage. When readers come across a word or subject matter they are unfamiliar with, they can click on the hyperlinked word to find out more information. This is a great way to expand knowledge and support any vocabulary challenges a child may have. Because of this, hyperlinks help students to build vocabulary and promote higher level thinking (Vacca and Vacca, 2008).

Another internet technology to improve reading is the use of WebQuests. These have become popular instructional tools for engaging students to learn on the internet. WebQuests are structured activities that send students on a search to find certain knowledge on the internet. One advantage is that students are free to browse the embedded links in the WebQuest. This gives students a sense of freedom when working on an assignment and helps increase motivation (Schweder and Wissick, 2008). Another advantage is that teachers can imbed learning and organizational tools into the WebQuest. These types of tools help to improve student cognition and literacy performance (Schweder and Wissick, 2008; Vacca and Vacca, 2008).

Technology can have many beneficial effects on students. It is a great way for students to improve their fluency and literacy in ways never done in the past. A number of students prefer to use technology when learning over alternative methods (Mechling, Gast, and Krupa, 2007; Schweder and Wissick, 2008) It should be noted, though, that technology alone cannot have drastic effects on students. It must be paired with other proven teaching methods to become a valuable resource for teachers (Sokal and Katz, 2008).

However, technology does not come without its problems. Even though there are a number of success stories with technology in the classroom, there are several problems associated with it. First, technology comes with a heavy price tag. As one can tell by walking into any electronic retail store, newer technology usually has a higher cost. SMART Board technology, for example, cost a couple hundred to a few thousand dollars in price (SMART Technologies, 2006). When multiplied by the number of classrooms and the number of schools, this becomes a major expense for a school district to consider. Second, there are some technologies that students do not feel are fully beneficial for school functions. For example, even though e-books provide a convenient way of having many textbooks available on one small device, some students still do not use them. Some students argue that e-books provide a difficulty when researching a project. Referencing several materials at once is not possible on the e-book, and this provides a disservice when researching (Kolowich, 2010). Third, not everyone is able to use technology fluently. Just like reading, using technology is a skill one needs to acquire. If a teacher or student does not know how to use a particular technology, they will be unable to use it to their advantage. In fact, technology can be a disadvantage to a student’s education if used improperly (Anderson and Balajthy 2009; Ediger, 2002). Fourth, not every educator is a supporter of new technologies. Some educators, especially veteran teachers, have been using non-technological methods for many years. They feel it would be a difficult transition to switch their teaching methods and would put them at a disadvantage (Ediger, 2002). It has also been reported that many teachers find it difficult to gain support from their school administrators to integrate new technology into the classroom (Ediger, 2002). Finally, teachers must be extremely careful when using internet based technology. The internet is a powerful and extremely useful tool, but can be unproductive if used improperly. There is a vast amount of information online; however, it is not all valid. If a student or teacher is not careful, untrue information can be incorporated into a project or lesson. In addition, off task behaviors can increase when using the internet it is highly interactive and appealing. The internet is a great tool, but does not guarantee productiveness (Anderson and Balajthy, 2009). Internet activities must be structured in order for students to benefit from its use.

Despite these downfalls, technology can be a wonderful thing to use in the classroom if properly used. There are many resources available, and it is a great way to get students active and involved in the classroom. It helps to keep students’ attention and motivation levels high. As technologies continue to develop, their applications will improve and be more beneficial to students (Ediger, 2002). The problems, on the other hand, will continue to decrease. Glitches will be debugged, and technology will be further integrated into the classroom as its benefits are demonstrated. If we want to provide an exceptional education to the students , we should definitely look at the benefits of technology and incorporate them into our lessons. If used properly, technology will provide many opportunities for students to perform successfully in the classroom.

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